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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/092,966

03/05/2002

Hiroomi Hanai

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20995

7590

11/17/2003

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER

SAVAGE, JASON L

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 11/17/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

CLO 7

Office Action Summary	Application No.		Applicant(s)	
	10/092,966		HANAI, HIROOMI	
	Examiner		Art Unit	
	Jason L. Savage		1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 12-13, 15 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uriu et al. (US 5,647,966).

Uriu teaches a method for manufacturing a ceramic green sheet inductor (col. 4, 3-21).

The method comprises the steps of forming a conductive electrode pattern 15 on an adhesive layers 16 which is separable by being heated (col. 10, ln. 23-51). Next a ceramic green sheet 17 is applied to the conductive electrode pattern (Figure 6). Uriu further teaches that the ceramic green sheet may be formed from a ceramic slurry (col. 10, ln. 41-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to have used a ceramic slurry to form the ceramic green sheet 17 since Uriu teaches that the use of ceramic slurries are suitable. Such an inductor formed by this method would result in the ceramic slurry 17 being applied to the electrode pattern 15 and an exposed surface of the adhesive layer 16.

Uriu is silent to using a carrier sheet in conjunction with the adhesive layer; however, the combination of a releasable adhesive on a carrier sheet is a structure that is known by one of ordinary skill in the art and would have been an obvious modification to the process taught by

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Uriu. One may have been motivated to use a carrier sheet in conjunction with the adhesive to assist in separation of the adhesive layer after foaming.

Regarding claim 3, Uriu does not teach that the foamable adhesive contain expandable particles, however the use of expandable particles to effect foaming in an adhesive is well known and would have been an obvious design choice.

Regarding claims 4 and 12, Uriu is silent to the dynamic modulus of elastic of the adhesive at the claimed temperatures, however, absent a teaching of the criticality of the claimed modulus of elasticity, it would not provide a patentable distinction over the prior art.

Regarding claim 5, Uriu is silent to the adhesive being a side chain crystalline resin, however on page 17, lines 13-17 of the specification, Applicant states that the crystallization of the side chain crystalline resin advanced by heating to lose adhesion so that the adhesive strength might be decreased to a level in which the carrier sheet may be easily separated. It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected an adhesive which displayed a decreased level of adhesion when heated, such as a side chain crystalline resin, since Uriu teaches that the adhesive strength should decrease once the adhesive is heated.

Regarding claims 6 and 13, Uriu is silent to the adhesive strength of the adhesive however it does teach that the adhesive strength is good but that it decreases sufficiently to effect release when heated to a certain temperature (col. 10, ln. 32-51). The amount of adhesive

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strength desired at room temperature would have merely been a design choice which does not provide a patentable distinction over the prior art.

Regarding claims 15, 17-20, Uriu teaches heating to foam the adhesive layer to effect the separation of the layer (col. 10, ln. 47-51 and col. 11, 1-13).

3. Claims 1, 7-11, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uriu et al. (US 5,647,966) in view of Muramatsu (US 6,011,300).

Uriu teaches what is set forth above however it is silent to using UV curing to assist in separating the electrode pattern from the adhesive layer. Muramatsu teaches a circuit device which has a base film and a protective film which are adhered to each other by an adhesive agent (col. 4, ln. 34-65). Muramatsu further teaches that separation may be achieved by a decrease in the adhesive force in the adhesive by heating and that a particularly desirable adhesive is one that is UV curable (col. 4, ln. 44-52). It would have been within the level of one of ordinary skill in the art to have selected any known adhesive that is known to be separable after being heated, including UV curable adhesives making the use of such a UV curable adhesive an obvious design choice. In response to the issue whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor

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was involved, *In re Wood*, 202 USPQ 171, 174. In the instant case, both Uriu and Muramatsu are generally drawn to methods for forming electronic components employing an adhesive layer which is separable after subjecting the adhesive to some form of heating.

Regarding claim 8, Uriu teaches laminating ceramic green sheets **206** onto other green sheets **208** (Figure 12 E). Uriu teaches that the use of a heat separable adhesive layer to form the ceramic green sheet and then transferring the green sheet onto other ceramic green sheets is a suitable method of forming the multilayer component (col. 13, ln. 38-42).

Regarding claims 9-11, the claimed articles would have been formed by the methods taught by Uriu.

Response to Arguments

4. Applicant's arguments with respect to claims 1 and 3-22 have been considered but are moot in view of the new ground(s) of rejection.

The Examiner wishes to thank Applicant for pointing out the error that the assertions made in the prior office action were pertinent to the Uriu (US 5,647,966) reference and not the Tsukagoshi reference as recited.

Applicant's argues that with respect to claim 1, Uriu fails to teach an adhesive that is separable by being cured with UV. The combination of Uriu in view of Muramatsu meets this limitation and thus Applicant's argument is moot in view of the new grounds of rejection.

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Applicant states that the present invention recites applying the ceramic slurry onto the electrode pattern and an exposed surface of the adhesive layer and that this limitation means the green sheet has a flat surface (no convex portions of the electrode pattern) when the green sheet is separated from the adhesive layer of the carrier sheet because the ceramic slurry contacts the exposed surface of the adhesive layer. This argument is not commensurate in scope with the claims as there are no limitation of a flat surface or the lack of convex portions of the electrode pattern.

Applicant further argues that the ceramic sheet 19 adheres to the conductive electrode pattern 15 but does not adhere to an exposed surface of the adhesive layer 16, thereby forming convex portions of the electrode pattern. Once again, the argument of convex portions is not commensurate in scope with the claim. However, in order to clarify the record, the Examiner understands Applicant's statement of convex portions to be the portion that protrudes from the ceramic layer such as the exposed portion of contact 215 depicted in figure 12D of Uriu. If this is correct, even the addition of the limitation of the absences of convex portions would not overcome the present rejection since it is the position of the Examiner that the ceramic layers formed by the method recited below would have the same structure without convex portions.

Regarding the arguments that are commensurate in scope with the claims, e.g. the ceramic slurry is formed on the electrode pattern and an exposed portion of the adhesive, the uses of a ceramic slurry to form the ceramic green sheet 17 depicted in figure 6 would meet the claim limitation. Although figure 6 shows that the ceramic sheet 17 does not actually contact the

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adhesive layer, employing a ceramic slurry to form the green sheet 17 would contact the adhesive layer and thus meet the claim limitations.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

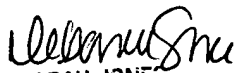
6. Any inquiry to this communication or earlier communications from the Examiner should be directed to Jason Savage, whose telephone number is (703)305-0549. The Examiner can normally be reached Monday to Friday from 6:30 AM to 4:00 PM.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on (703)308-3822.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)308-2351.


Jason Savage


DEBORAH JONES
SUPERVISOR

11-14-03